

What is claimed is:

1 1. A washing machine control method comprising steps of:
2 accelerating a motor to a target rotational speed, by periodically applying to the motor
3 a pulse width modulation (PWM) signal having a predetermined duty ratio;
4 storing in a memory a set of PWM values corresponding to the signal applied in said
5 accelerating step, by sensing a rotational speed of the motor;
6 outputting a PWM signal having a duty ratio of zero, after the sensed motor speed
7 reaches the target rotational speed, to allow the motor to freewheel to a stop;
8 computing an average of the stored PWM values;
9 measuring a rotational angle of the motor as the motor freewheels to a stop; and
10 calculating a laundry amount estimation value based on the average of the stored
11 PWM values and the motor's rotational angle.

1 2. The method as claimed in claim 1, further comprising a step of determining a
2 laundry amount by comparing the calculated laundry amount estimation value to a set of
3 laundry amount reference values stored in a lookup table.

1 3. The method as claimed in claim 1, wherein the laundry amount estimation
2 value equals $w_1 \text{PWM}_{ave} + w_2 \theta_{motor}$, where PWM_{ave} is the computed average of the stored
3 PWM values, θ_{motor} is the measured rotational angle, and w_1 and w_2 are weight constants.

1 4. The method as claimed in claim 3, wherein the weight constants w_1 and w_2
2 are arbitrarily set to render the laundry amount estimation as a specific value when the motor

3 is driven without a load.

1 5. The method as claimed in claim 1, wherein the stored PWM values of said
2 average computing step are the PWM values corresponding to the PWM signal applied to the
3 motor, from a motor drive initiating point to the time of discontinuing the drive of the motor.

1 6. The method as claimed in claim 1, wherein the motor is driven at a constant
2 speed corresponding to the target rotational speed for a predetermined time before said
3 outputting step.

1 7. The method as claimed in claim 6, wherein the stored PWM values of said
2 average computing step are the PWM values corresponding to the PWM signal applied to the
3 motor, from a motor drive initiating point to the time of discontinuing the drive of the motor.

1 8. The method as claimed in claim 1, wherein the PWM value is applied to the
2 motor according to a 4ms cycle.